

Work Order ID 90747

\*90747\*

Page 1

September-24-12 2:54:05 PM

Item ID: D3391-025

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Aft Tube Assembly

Stop \*NS2\*

Start Date: 9/24/12 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 10/26/12 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12-09-25 Tooling:

Date:

Run Start \*NR1\*

QC:

Date: SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

| Draw Nbr | Revision Nbr |
|----------|--------------|
| D3391    | 1            |

100

0.00

\*100\*

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

Turn as per Folio FA599

Rev: 4A & Dwg D3391 Rev 1

\*\*\*scribe batch # on fwd end at 90 degree\*\*\*

110

QC2-Inspect parts off machine FAI/FAIB

0.00

\*110\*

QC

Memo

0.00

Quality Control

111

QC8- Inspect parts - second check

0.00

\*111\*

QC

Memo

0.00

Quality Control

\*\*\*INSPECT INSIDE BORE\*\*\*

SCRAP

SEUP

OK 12/11/01

1 0 KC 12-10-13

1 0 KC 12-10-13

1 0 DAS 14 2-09

☆ PTO

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |          |      |     |  |                          |   |             |              |              |  |  |
|--|----------|------|-----|--|--------------------------|---|-------------|--------------|--------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |          |      |     | <b>DISPOSITION</b><br><br>Rework <input checked="" type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                          | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |             |              |              |  |  |
| Root Cause   | Date     | Step | Qty | Description of work order update or Non-conformance  | Initial Chief Eng        | Action Description  | Sign & Date | Verification | QC Inspector |  |  |
| Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Material <input type="checkbox"/><br>Setup <input type="checkbox"/><br>Other <input type="checkbox"/><br>Process <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Unapproved <input type="checkbox"/> | 12/10/22 | 100  | 1   | Overall length is 89.02"   | DAS<br>12-89<br>12/10/22 | Cut tapered end so length is in tolerance.  |             |              |              |  |  |

| FAULT CATEGORY   |   |   |  |   |
|--|---|---|--|---|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |

# Work Order ID 90747

September-24-12 2:54:05 PM

**\*90747\***

Page 2

Item ID: D3391-025 Accept **\*N9000040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Aft Tube Assembly  
 Start Date: 9/24/12 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 10/26/12 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID                                | Operation<br>Description   | Set Up/<br>Run Hours | Tool ID              | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|---|--|----------------------|----------------------|--------|--------------|---------------|---------------|------------------|-------------------|
| 120<br><b>*120*</b><br>HAAS 1<br>HAAS CNC vertical machine #1 | HAAS CNC VERTICAL MACHINING #1<br><br>Memo<br>1-Machine as per Folio FA 599 Rev: <u>AA</u> & Dwg D3391 Rev: <u>I</u><br>2-Deburr | 0.00<br><br>0.00     | <i>OK 12/11/01</i>   |        |              | <u>1</u>      | <u>0</u>      |                  | DAS<br>14<br>9-09 |
| 130<br><b>*130*</b><br>QC<br>Quality Control                  | QC2- Inspect parts off machine FAI/FAIB<br><br>Memo  | 0.00<br><br>0.00     | <i>OK 12/11/01</i>   |        |              | <u>1</u>      | <u>0</u>      |                  | DAS<br>14<br>9-09 |
| 140<br><b>*140*</b><br>QC<br>Quality Control                  | QC8- Inspect parts - second check<br><br>Memo<br>***INSPECT INSIDE BORE***   | 0.00<br><br>0.00     | <i>D.A. 12/11/01</i> |        |              | <u>1</u>      | <u>0</u>      |                  | DAS<br>08<br>9-09 |

**POSITIVE RECALL**

EFFECTIVE 12/10/12 AUTH JP

RELEASED \_\_\_\_\_ DATE \_\_\_\_\_

*Cut to length*

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
|---|-------------|-------------|---|---|--------------------------|---|------------------------|---------------------|--|--|---|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____  |             |             |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                          | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                        |                     |  |  |   |  |
| <b>Root Cause</b>   | <b>Date</b> | <b>Step</b> | <b>Qty</b>  | <b>Description of work order update or Non-conformance</b>  | <b>Initial Chief Eng</b> | <b>Action Description</b>   | <b>Sign &amp; Date</b> | <b>Verification</b> | <b>QC Inspector</b>  |  |   |  |
| Doc/Data <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Equip/Tooling <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Operator <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Material <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Setup <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Other <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Process <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Supplier <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Training <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Unapproved <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| <b>FAULT CATEGORY</b>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |             |             | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                          | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |                        |                     | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |  |

**\*90747\***

Page 3

**\*N900040100\***

Setup Start \*NS1\*

Stop **\*NS2\***

**Start Date:** 9/24/12      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 10/26/12      **Req'd Qty:** 1.00      **\*1\***

**Customer:**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

**Insp.  
Stamp**

0.00

**\*150\***

## Skidtubes

0.00

## Skidtubes

## Memo

## Skidtubes

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

0.00

**\*160\***

## BENDING MACHINE - SKIDTUBES

0.00

CNC Bend 1

## Memo

## CNC Delta 100 Bender

Form as per Dwg D3391 Using Bend Prog 3391025

|   |      |
|---|------|
| QC5- Inspect part completeness to step on W/O | 0.00 |
|---|------|

0.00

**\*170\***

## Memo

0.00

QC

## Quality Control

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: John Date: 12/11/10QA Closed: ✓ Date:

|                                       |  |  |  |  |  |   |  |  |  |
|---------------------------------------|--|--|--|--|--|---|--|--|--|
| Work Order: <u>90747</u>              |  |  |  | DISPOSITION                                |  | AGAINST DEPARTMENT/PROCESS                      |  |  |  |
| Part No. <u>D3391-025</u>             |  |  |  | Rework <input type="checkbox"/>            |  | Skid-tube <input checked="" type="checkbox"/>   |  |  |  |
| NCR No. <u>12-1986</u> <u>12-2004</u> |  |  |  | Scrap <input type="checkbox"/>             |  | Crosstube <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  | Use-as-is <input type="checkbox"/>         |  | Machining <input checked="" type="checkbox"/>   |  |  |  |
|                                       |  |  |  | Work Order Update <input type="checkbox"/> |  | Thermoforming <input type="checkbox"/>          |  |  |  |
|                                       |  |  |  |  |  | Small Fab <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  |  |  | Finishing <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  |  |  | Large Fab <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  |  |  | Composite <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  |  |  | Water Jet <input type="checkbox"/>              |  |  |  |
|                                       |  |  |  |  |  | Prod. Eng. Coord. <input type="checkbox"/>      |  |  |  |
|                                       |  |  |  |  |  | Rec/Store/Packaging <input type="checkbox"/>    |  |  |  |
|                                       |  |  |  |  |  | Supplier <input type="checkbox"/>               |  |  |  |
|                                       |  |  |  |  |  | Engineering <input checked="" type="checkbox"/> |  |  |  |
|                                       |  |  |  |  |  | Quality <input type="checkbox"/>                |  |  |  |
|                                       |  |  |  |  |  | Other <input type="checkbox"/>                  |  |  |  |

| Root Cause                             | Date            | Step       | Qty      | Description of work order update or Non-conformance | Initial Chief Eng                | Action Description  | Sign & Date  | Verification                 | QC Inspector  |
|--|-----------------|------------|----------|---|----------------------------------|---|--------------|------------------------------|---|
| Doc/Data <input type="checkbox"/>      | <u>12/11/10</u> | <u>150</u> | <u>1</u> | tube has large score from bearing on steady rest    | <u>12/11/10</u><br><u>022042</u> | tube is SCRAP<br>Per NCR 12-1986.<br><br><u>\$1516.07</u> | <u>12-11</u> | <u>DC</u><br><u>12/11/01</u> | <u>DAS</u><br><u>16</u><br><u>0-03</u><br><u>11/11/01</u> |
| Equip/Tooling <input type="checkbox"/> |                 |            |          |   |                                  |   |              |                              |   |
| Operator <input type="checkbox"/>      |                 |            |          |   |                                  |   |              |                              |   |
| Material <input type="checkbox"/>      |                 |            |          |   |                                  |   |              |                              |   |
| Setup <input type="checkbox"/>         |                 |            |          |   |                                  |   |              |                              |   |
| Other <input type="checkbox"/>         |                 |            |          |   |                                  |   |              |                              |   |
| Process <input type="checkbox"/>       |                 |            |          |   |                                  |   |              |                              |   |
| Supplier <input type="checkbox"/>      |                 |            |          |   |                                  |   |              |                              |   |
| Training <input type="checkbox"/>      |                 |            |          |   |                                  |   |              |                              |   |
| Unapproved <input type="checkbox"/>    |                 |            |          |   |                                  |   |              |                              |   |

| FAULT CATEGORY  |   |  |   |
|---|---|--|---|
| Landing Gear  |   | General  |   |
| <input type="checkbox"/> Bending                      | <input type="checkbox"/> Bend           | <input type="checkbox"/> Grain                           | <input type="checkbox"/> Ovalized             |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route      | <input type="checkbox"/> Hardware                        | <input type="checkbox"/> Over/Under tolerance |
| <input type="checkbox"/> Cracks                       | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Inspection Incomplete           | <input type="checkbox"/> Part Incorrect       |
| <input type="checkbox"/> Crushed/Crimped.             | <input type="checkbox"/> Burrs          | <input type="checkbox"/> Instructions Incomplete/Unclear | <input type="checkbox"/> Part Lost/Missing    |
| <input type="checkbox"/> Cuffs                        | <input type="checkbox"/> Contamination  | <input type="checkbox"/> Maintenance                     | <input type="checkbox"/> Part Moved           |
| <input type="checkbox"/> Heat Treat                   | <input type="checkbox"/> Countersink    | <input type="checkbox"/> Mislabeled                      | <input type="checkbox"/> Positioned Wrong     |
| <input type="checkbox"/> Inspection Strip in Tube     | <input type="checkbox"/> Cut Too Short  | <input type="checkbox"/> Misread                         | <input type="checkbox"/> Power Loss/Surge     |
| <input type="checkbox"/> Ripples in Bend              | <input type="checkbox"/> Drill Holes    | <input type="checkbox"/> Offset                          | <input checked="" type="checkbox"/> Other     |
| <input type="checkbox"/> Torque Waves in Extrusion    | <input type="checkbox"/> Drawing        | <input type="checkbox"/> Out of Calibration              | <u>missed at inspection +</u>                 |
| <input type="checkbox"/> Turning Sequence             | <input type="checkbox"/> Finish         | <input type="checkbox"/> Out of Sequence                 | <u>miss use of P/R.</u>                       |
| <input type="checkbox"/> Wave/Twist in Tube           | <input type="checkbox"/> Folio          | <input type="checkbox"/> Outside Dimensions              | <u>see NCR 12-1986</u>                        |

**\*90747\***

Page 4

\*N900040100\*

Setup Start \*NS1\*

Stop \*NS2\*

**Start Date:** 9/24/12      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 10/26/12      **Req'd Qty:** 1.00      **\* 1 \***

**Customer:**

**Reference:**

**Approvals:** \_\_\_\_\_ **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

**Insp.  
Stamp**

0.00

**\*180\***

## Skidtubes

0.00

## Skidtubes

## Memo

## Skidtubes

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig .

\*\*\*\*\*Do Not Open To Finished Size\*\*\*\*\*

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per Dwg D3391.

7-Deburr

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
|--|-------------|-------------|---|---|--------------------------|---|------------------------|---------------------|--|--|---|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |             |             |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                          | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                        |                     |  |  |   |  |
| <b>Root Cause</b>  | <b>Date</b> | <b>Step</b> | <b>Qty</b>  | <b>Description of work order update or Non-conformance</b>  | <b>Initial Chief Eng</b> | <b>Action Description</b>   | <b>Sign &amp; Date</b> | <b>Verification</b> | <b>QC Inspector</b>  |  |   |  |
| Doc/Data <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Equip/Tooling <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Operator <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Material <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Setup <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Other <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Process <input type="checkbox"/>   |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Supplier <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Training <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| Unapproved <input type="checkbox"/>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| <b>FAULT CATEGORY</b>  |             |             |   |   |                          |   |                        |                     |  |  |   |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |             |             | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                          | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |                        |                     | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |  |



**Work Order ID 90747****\*90747\***

Page 5

September-24-12 2:54:05 PM

Item ID: D3391-025      Accept      **\*N900040100\***      Setup      Start      **\*NS1\***  
Revision ID:      Stop      **\*NS2\***  
Item Name: Aft Tube Assembly  
Start Date: 9/24/12      Start Qty: 1.00      **\*1\***      Cust Item ID:  
Required Date: 10/26/12      Req'd Qty: 1.00      **\*1\***      Customer:  
Reference:

Approvals:      Process Plan:      Date:      Tooling:      Date:      Run      Start      **\*NR1\***  
                 QC:      Date:      SPC (Y/N):      Date:      Stop      **\*NR2\***

| Sequence ID/<br>Work Center ID                      | Operation<br>Description                                  | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|---|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 190<br><b>*190*</b><br>QC<br>Quality Control        | QC5- Inspect part completeness to step on W/O<br><br>Memo | 0.00<br><br>0.00     |         |        |              |               |               |                  |                |
| 200<br><b>*200*</b><br>HandFinish<br>Hand Finishing | Chemical Conversion Coat per QSI005 4.1<br><br>Memo       | 0.00<br><br>0.00     |         |        |              |               |               |                  |                |
| 210<br><b>*210*</b><br>QC<br>Quality Control        | QC7-Inspect Chemical Conversion Coat<br><br>Memo          | 0.00<br><br>0.00     |         |        |              |               |               |                  |                |

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |      |      |     |   |                      |   |                |              |              |  |  |
|--|------|------|-----|---|----------------------|---|----------------|--------------|--------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |      |      |     | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                |              |              |  |  |
| <b>Root Cause</b>  | Date | Step | Qty | Description of work order update<br>or Non-conformance  | Initial<br>Chief Eng | Action<br>Description   | Sign &<br>Date | Verification | QC Inspector |  |  |
| Doc/Data   |      |      |     |   |                      |   |                |              |              |  |  |
| Equip/Tooling  |      |      |     |   |                      |   |                |              |              |  |  |
| Operator   |      |      |     |   |                      |   |                |              |              |  |  |
| Material   |      |      |     |   |                      |   |                |              |              |  |  |
| Setup  |      |      |     |   |                      |   |                |              |              |  |  |
| Other  |      |      |     |   |                      |   |                |              |              |  |  |
| Process  |      |      |     |   |                      |   |                |              |              |  |  |
| Supplier   |      |      |     |   |                      |   |                |              |              |  |  |
| Training   |      |      |     |   |                      |   |                |              |              |  |  |
| Unapproved   |      |      |     |   |                      |   |                |              |              |  |  |

| FAULT CATEGORY   |   |   |  |   |
|--|---|---|--|---|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |

**Work Order ID 90747****\*90747\***

Page 6

September-24-12 2:54:05 PM

Item ID: D3391-025

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Aft Tube Assembly

Stop

**\*NS2\***

Start Date: 9/24/12 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/26/12 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

**\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description  | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 220                            |   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*220*</b>                   | Skidtubes   |                      |         |        |              |               |               |                  |                |
| Skidtubes                      | <b>Memo</b>   | 0.00                 |         |        |              |               |               |                  |                |
| Skidtubes                      | Instal spacers as per dwg D3391<br>A/R Magnabond 6398 Batch: _____<br>exp. date : _____<br>cure time 12hrs as per QSI0015 |                      |         |        |              |               |               |                  |                |
| 230                            | QC5- Inspect part completeness to step on W/O   | 0.00                 |         |        |              |               |               |                  |                |
| <b>*230*</b>                   |   |                      |         |        |              |               |               |                  |                |
| QC                             | <b>Memo</b>   | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |   |                      |         |        |              |               |               |                  |                |
| 235                            | Pressure Wash per QSI005 4.3  | 0.00                 |         |        |              |               |               |                  |                |
| <b>*235*</b>                   |   |                      |         |        |              |               |               |                  |                |
| HandFinish                     | <b>Memo</b>   | 0.00                 |         |        |              |               |               |                  |                |
| Hand Finishing                 | AND REALODINE AS PER PAR09-043  |                      |         |        |              |               |               |                  |                |

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |      |      |   |   |                   |   |             |              |   |  |  |
|--|------|------|---|---|-------------------|---|-------------|--------------|---|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |      |      |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |             |              |   |  |  |
| <b>Root Cause</b>  | Date | Step | Qty   | Description of work order update or Non-conformance   | Initial Chief Eng | Action Description  | Sign & Date | Verification | QC Inspector  |  |  |
| Doc/Data <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Equip/Tooling <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Operator <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Material <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Setup <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Other <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Process <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Supplier <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Training <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Unapproved <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| <b>FAULT CATEGORY</b>  |      |      |   |   |                   |   |             |              |   |  |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |      |      | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                   | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |             |              | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |  |  |

**\*90747\***

Page 7

**\*N900040100\***

Setup Start \*NS1\*

Stop **\*NS2\***

**Start Date:** 9/24/12      **Start Qty:** 1.00      **\*1\***

**Required Date:** 10/26/12      **Req'd Qty:** 1.00      **\* 1 \***

**Reference:**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

**Insp.  
Stamp**

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*240\***

**Powdercoat**

## Memo

0.00

## Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME: \_\_\_\_\_

### QC3- Inspect Part Finish

0.00

**\*250\***

QC

## Memo

0.00

## Quality Control

0.00

\*260\*

HandFinish

## HandFinishing

## Memo

0.00

## Hand Finishing

1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/ R Sikaflex-241/-291

Sikaflex expiry date: \_\_\_\_\_

3- INSTALL WEARPLATES AS PER DWG

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |   |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|---|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>  | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Setup         |      |      |     |   |                   |                    |             |              |              |
| Other         |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

**FAULT CATEGORY**

| Landing Gear  | General                                 | Other  |
|---|---|--|
| <input type="checkbox"/> Bending                      | <input type="checkbox"/> Bend           | <input type="checkbox"/> Grain                           |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route      | <input type="checkbox"/> Hardware                        |
| <input type="checkbox"/> Cracks                       | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Inspection Incomplete           |
| <input type="checkbox"/> Crushed/Crimped.             | <input type="checkbox"/> Burrs          | <input type="checkbox"/> Instructions Incomplete/Unclear |
| <input type="checkbox"/> Cuffs                        | <input type="checkbox"/> Contamination  | <input type="checkbox"/> Maintenance                     |
| <input type="checkbox"/> Heat Treat                   | <input type="checkbox"/> Countersink    | <input type="checkbox"/> Mislabeled                      |
| <input type="checkbox"/> Inspection Strip in Tube     | <input type="checkbox"/> Cut Too Short  | <input type="checkbox"/> Misread                         |
| <input type="checkbox"/> Ripples in Bend              | <input type="checkbox"/> Drill Holes    | <input type="checkbox"/> Offset                          |
| <input type="checkbox"/> Torque Waves in Extrusion    | <input type="checkbox"/> Drawing        | <input type="checkbox"/> Out of Calibration              |
| <input type="checkbox"/> Turning Sequence             | <input type="checkbox"/> Finish         | <input type="checkbox"/> Out of Sequence                 |
| <input type="checkbox"/> Wave/Twist in Tube           | <input type="checkbox"/> Folio          | <input type="checkbox"/> Outside Dimensions              |
|   |   | <input type="checkbox"/> Ovalized                        |
|   |   | <input type="checkbox"/> Over/Under tolerance            |
|   |   | <input type="checkbox"/> Part Incorrect                  |
|   |   | <input type="checkbox"/> Part Lost/Missing               |
|   |   | <input type="checkbox"/> Part Moved                      |
|   |   | <input type="checkbox"/> Positioned Wrong                |
|   |   | <input type="checkbox"/> Power Loss/Surge                |
|   |   | <input type="checkbox"/> Pressure/Forced                 |
|   |   | <input type="checkbox"/> Temperature/Cure                |
|   |   | <input type="checkbox"/> Weld                            |
|   |   | <input type="checkbox"/> Wrong Stock Pulled              |
|   |   | <input type="checkbox"/> Other                           |

**Work Order ID 90747****\*90747\***

Page 8

Item ID: D3391-025

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Aft Tube Assembly

Stop **\*NS2\***

Start Date: 9/24/12

Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/26/12

Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

270

QC5- Inspect part completeness to step on W/O

0.00

**\*270\***

QC

Memo

0.00

Quality Control

280

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

**\*280\***

Packaging

Memo

0.00

Packaging

290

QC21- Final Inspection - Work Order Release

0.00

**\*290\***

QC

Memo

0.00

Quality Control

MCS 12-11-02



NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|   |      |      |   |   |                      |   |                |              |  |  |   |
|---|------|------|---|---|----------------------|---|----------------|--------------|--|--|---|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____  |      |      |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                |              |  |  |   |
| <b>Root Cause</b>   | Date | Step | Qty   | Description of work order update<br>or Non-conformance  | Initial<br>Chief Eng | Action<br>Description   | Sign &<br>Date | Verification | QC Inspector   |  |   |
| Doc/Data <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| Equip/Tooling <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |  |  |   |
| Operator <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| Material <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| Setup <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |  |  |   |
| Other <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |  |  |   |
| Process <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |  |  |   |
| Supplier <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| Training <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| Unapproved <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |  |  |   |
| <b>FAULT CATEGORY</b>   |      |      |   |   |                      |   |                |              |  |  |   |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |      |      | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                      | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |                |              | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |



# Picklist Print

September-24-12 2:54:04 PM

Page 1

Work Order ID: 90747

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/24/12

Required Date: 10/26/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev B 06-02-07 ECN773 dwg rev. D EC  
 IPP Rev:C 06-03-28 Update Manuf. Instructions JLM  
 IPP rev D 07.03.20 revF dwg EC  
 IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD  
 IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC  
 IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC IPP Rev:H 11.11.14 AS PER REV.I  
 DD verified by:JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand  | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|-----------------|-------------|--------------|---------------|----------------|--------|
| D4095-047<br>Wearpad Assembly   |                        | Manufactured  | No          |                     |                  | 260             | Each               | 20.0000         | 1           | 1            |               |                |        |
|                                 |                        |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |             |              |               |                |        |
|                                 |                        |               |             | FP001               |                  | 8               |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 85498               |                  | 8               |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | FP002               |                  | 12              |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 86245               |                  | 12              |                    |                 |             |              |               |                |        |
| D4095-049<br>Wearpad Assembly   |                        | Manufactured  | No          |                     |                  | 260             | Each               | 24.0000         | 1           | 1            |               |                |        |
|                                 |                        |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |             |              |               |                |        |
|                                 |                        |               |             | FP002               |                  | 24              |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 81612               |                  | 4               |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 85613               |                  | 12              |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 86246               |                  | 8               |                    |                 |             |              |               |                |        |
| D6014-090<br>ALUMINUM EXTRUSION |                        | Manufactured  | No          |                     |                  | 100             | Each               | 56.0000         | 1           | 1            |               |                |        |
|                                 |                        |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |             |              |               |                |        |
|                                 |                        |               |             | LG                  |                  | 56              |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 77332               |                  | 26              |                    |                 |             |              |               |                |        |
|                                 |                        |               |             | 79742               |                  | 30              |                    |                 |             |              |               |                |        |

1 mm. l 12/10/12

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |      |      |   |   |                   |   |             |              |  |  |   |  |
|--|------|------|---|---|-------------------|---|-------------|--------------|--|--|---|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |      |      |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |             |              |  |  |   |  |
| <b>Root Cause</b>  | Date | Step | Qty   | Description of work order update or Non-conformance   | Initial Chief Eng | Action Description  | Sign & Date | Verification | QC Inspector   |  |   |  |
| Doc/Data <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| Equip/Tooling <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |  |  |   |  |
| Operator <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| Material <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| Setup <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |  |  |   |  |
| Other <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |  |  |   |  |
| Process <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |  |  |   |  |
| Supplier <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| Training <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| Unapproved <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| <b>FAULT CATEGORY</b>  |      |      |   |   |                   |   |             |              |  |  |   |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |      |      | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                   | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |             |              | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |  |

# Picklist Print

September-24-12 2:54:04 PM

Page 2

Work Order ID: 90747

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/24/12

Required Date: 10/26/12

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

230

Each

416.0000

4

4

SPACER

Location

Loc Qty

Loc Code

LG

40

80360

40

LG001

376

78606

2

81972

7

85460

9

87709

260

88580

98

D2646

Manufactured No

270

Each

90.0000

1

1

Aft Cap

Location

Loc Qty

Loc Code

FG

2

85848

2

FP002

88

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

79562

2

81974

19

85443

9

85848

42

September-24-12 2:54:04 PM

Shop Packet Print

Page 2

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |      |      |   |   |                      |   |                |              |   |  |  |
|--|------|------|---|---|----------------------|---|----------------|--------------|---|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |      |      |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                |              |   |  |  |
| <b>Root Cause</b>  | Date | Step | Qty   | Description of work order update<br>or Non-conformance  | Initial<br>Chief Eng | Action<br>Description   | Sign &<br>Date | Verification | QC Inspector  |  |  |
| Doc/Data <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| Equip/Tooling <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |   |  |  |
| Operator <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| Material <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| Setup <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |   |  |  |
| Other <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |   |  |  |
| Process <input type="checkbox"/>   |      |      |   |   |                      |   |                |              |   |  |  |
| Supplier <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| Training <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| Unapproved <input type="checkbox"/>  |      |      |   |   |                      |   |                |              |   |  |  |
| <b>FAULT CATEGORY</b>  |      |      |   |   |                      |   |                |              |   |  |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |      |      | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                      | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |                |              | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |  |  |

# Picklist Print

September-24-12 2:54:04 PM

Page 3

Work Order ID: 90747

Parent Item: D3391-025

Start Date: 9/24/12

Required Date: 10/26/12

Parent Item Name: Aft Tube Assembly

Start Qty: 1.00

Required Qty: 1.00

D3672-1  
Phenolic Washer

Manufactured No

270 Each 977.0000 2 2

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| FG              | 10             |                 |
| 85222           | 10             |                 |
| FP001           | 28             |                 |
| 80369           | 28             |                 |
| ST060           | 939            |                 |
| 72229           | 4              |                 |
| 76277           | 13             |                 |
| 83608           | 500            |                 |
| 85222           | 422            |                 |

ALS4-1032-130  
Insert

Purchased No

260 Each 3,871.0000 14 14

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| 279             | 3000           |                 |
| 122763          | 3000           |                 |
| ST280           | 205            |                 |
| 119084          | 116            |                 |
| 120671          | 89             |                 |
| ST281           | 526            |                 |
| 120807          | 36             |                 |
| 120837          | 8              |                 |
| 122474          | 482            |                 |
| ST282           | 140            |                 |
| 121269          | 140            |                 |

September-24-12 2:54:04 PM

Shop Packet Print

Page 3

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |      |      |   |   |                   |   |             |              |   |  |  |
|--|------|------|---|---|-------------------|---|-------------|--------------|---|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   |      |      |   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |             |              |   |  |  |
| <b>Root Cause</b>  | Date | Step | Qty   | Description of work order update or Non-conformance   | Initial Chief Eng | Action Description  | Sign & Date | Verification | QC Inspector  |  |  |
| Doc/Data <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Equip/Tooling <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Operator <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Material <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Setup <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Other <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Process <input type="checkbox"/>   |      |      |   |   |                   |   |             |              |   |  |  |
| Supplier <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Training <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| Unapproved <input type="checkbox"/>  |      |      |   |   |                   |   |             |              |   |  |  |
| <b>FAULT CATEGORY</b>  |      |      |   |   |                   |   |             |              |   |  |  |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |      |      | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio |   |                   | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions   |             |              | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |  |  |

# Picklist Print

September-24-12 2:54:04 PM

Page 4

Work Order ID: 90747

Parent Item: D3391-025

Start Date: 9/24/12

Required Date: 10/26/12

Parent Item Name: Aft Tube Assembly

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

270

Each

2,747.0000

8

8

Insert

Location

Loc Qty

Loc Code

FP-B

1308

122290

1308

ST281

1416

108696

146

110768

62

118386

55

118966

68

121269

85

122827

1000

ST282

23

120410

10

120451

13

AN3C4A

Purchased

No

270

Each

2,062.0000

6

6

BOLT

Location

Loc Qty

Loc Code

FG

20

122814

20

ST350

2042

120187

31

120521

28

120769

38

121205

61

121556

8

122151

42

122416

4

122814

1330

123021

500

September-24-12 2:54:05 PM

Shop Packet Print

Page 4

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |  |                                   |
|--|--|-----------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br><div style="display: flex; justify-content: space-around;"> <div>             Rework <input type="checkbox"/><br/>             Scrap <input type="checkbox"/><br/>             Use-as-is <input type="checkbox"/><br/>             Work Order Update <input type="checkbox"/> </div> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Crosstube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> | <b>AGAINST DEPARTMENT/PROCESS</b> |
|--|--|-----------------------------------|

| Root Cause    | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Setup         |      |      |     |   |                   |                    |             |              |              |
| Other         |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

|  |   |   |  |   |
|--|---|---|--|---|
| <b>Landing Gear</b><br><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimped.<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Ripples in Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damaged<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Folio | <input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Offset<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |
|--|---|---|--|---|



# Picklist Print

September-24-12 2:54:05 PM

Page 5

Work Order ID: 90747

Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 9/24/12

Required Date: 10/26/12

Start Qty: 1.00

Required Qty: 1.00

|        |           |    |     |      |            |   |   |
|--------|-----------|----|-----|------|------------|---|---|
| AN3C5A | Purchased | No | 270 | Each | 1,243.0000 | 4 | 4 |
| Bolt   |           |    |     |      |            |   |   |

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| FG              | 5              |                 |
| 122800          | 5              |                 |
| FP001           | 7              |                 |
| 115835          | 7              |                 |
| ST350           | 1231           |                 |
| 115835          | 0              |                 |
| 116419          | 28             |                 |
| 117343          | 13             |                 |
| 117764          | 7              |                 |
| 117872          | 2              |                 |
| 119749          | 23             |                 |
| 120423          | 28             |                 |
| 121255          | 23             |                 |
| 121708          | 500            |                 |
| 122141          | 80             |                 |
| 122800          | 527            |                 |

|           |               |           |    |     |      |         |    |    |
|-----------|---------------|-----------|----|-----|------|---------|----|----|
| AN960C10L | NAS1149C0332R | Purchased | No | 270 | Each | 21.0000 | 10 | 10 |
| washer    |               |           |    |     |      |         |    |    |

| <u>Location</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|-----------------|----------------|-----------------|
| ST              | 21             |                 |
| 107534          | 21             |                 |

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |   |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|---|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>  | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Setup         |      |      |     |   |                   |                    |             |              |              |
| Other         |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

**FAULT CATEGORY**

| Landing Gear  | General                                 | Other  |
|---|---|--|
| <input type="checkbox"/> Bending                      | <input type="checkbox"/> Bend           | <input type="checkbox"/> Grain                           |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route      | <input type="checkbox"/> Hardware                        |
| <input type="checkbox"/> Cracks                       | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Inspection Incomplete           |
| <input type="checkbox"/> Crushed/Crimped              | <input type="checkbox"/> Burrs          | <input type="checkbox"/> Instructions Incomplete/Unclear |
| <input type="checkbox"/> Cuffs                        | <input type="checkbox"/> Contamination  | <input type="checkbox"/> Maintenance                     |
| <input type="checkbox"/> Heat Treat                   | <input type="checkbox"/> Countersink    | <input type="checkbox"/> Misabeled                       |
| <input type="checkbox"/> Inspection Strip in Tube     | <input type="checkbox"/> Cut Too Short  | <input type="checkbox"/> Misread                         |
| <input type="checkbox"/> Ripples in Bend              | <input type="checkbox"/> Drill Holes    | <input type="checkbox"/> Offset                          |
| <input type="checkbox"/> Torque Waves in Extrusion    | <input type="checkbox"/> Drawing        | <input type="checkbox"/> Out of Calibration              |
| <input type="checkbox"/> Turning Sequence             | <input type="checkbox"/> Finish         | <input type="checkbox"/> Out of Sequence                 |
| <input type="checkbox"/> Wave/Twist in Tube           | <input type="checkbox"/> Folio          | <input type="checkbox"/> Outside Dimensions              |
|   |   | <input type="checkbox"/> Ovalized                        |
|   |   | <input type="checkbox"/> Over/Under tolerance            |
|   |   | <input type="checkbox"/> Part Incorrect                  |
|   |   | <input type="checkbox"/> Part Lost/Missing               |
|   |   | <input type="checkbox"/> Part Moved                      |
|   |   | <input type="checkbox"/> Positioned Wrong                |
|   |   | <input type="checkbox"/> Power Loss/Surge                |
|   |   | <input type="checkbox"/> Pressure/Forced                 |
|   |   | <input type="checkbox"/> Temperature/Cure                |
|   |   | <input type="checkbox"/> Weld                            |
|   |   | <input type="checkbox"/> Wrong Stock Pulled              |
|   |   | <input type="checkbox"/> Other                           |

5/2/2  
 2/2/2

|  |               |                             |
|--|---------------|-----------------------------|
| <b>DART AEROSPACE LTD</b>                |               | <b>Work Order:</b> 905947   |
| <b>Description:</b> Float Skidtube (412) |               | <b>Part Number:</b> D3391-3 |
| <b>Inspection Dwg:</b> D3391             | <b>Rev:</b> I | <b>Page 1 of 1</b>          |

### FIRST ARTICLE INSPECTION CHECKLIST

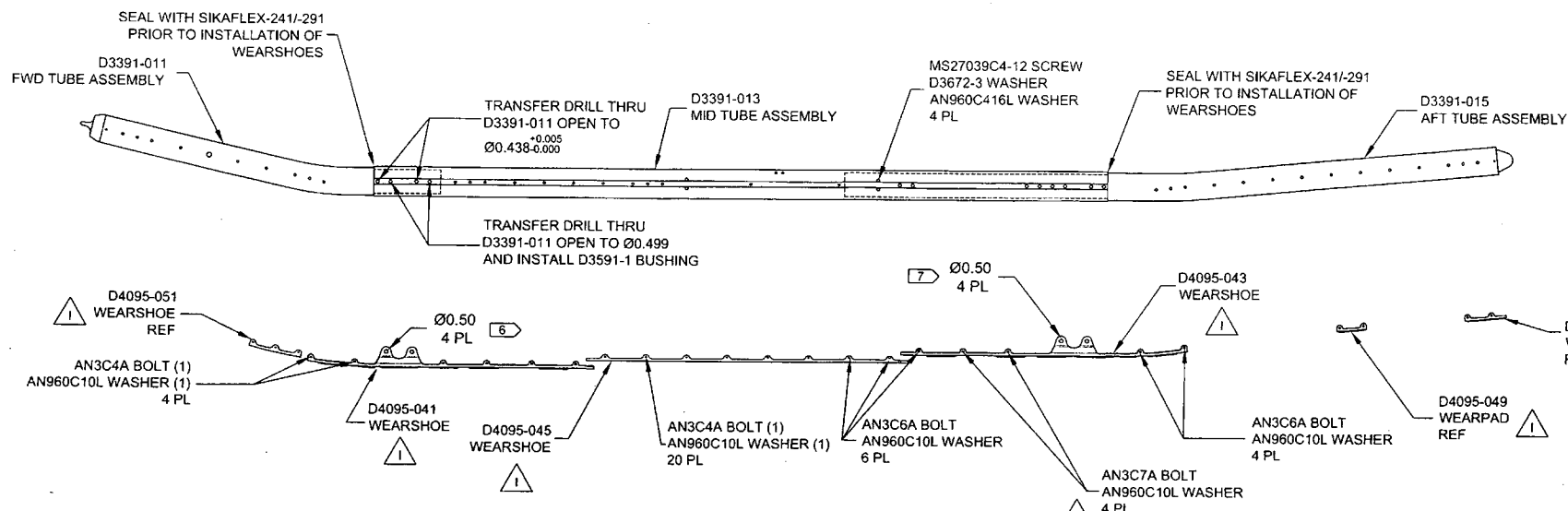
| Drawing Dimension    | Tolerance           | Actual Dimension | Accept      | Reject      | Method of Inspection | Comments    |
|----------------------|---------------------|------------------|-------------|-------------|----------------------|-------------|
| <b>Lathe Section</b> |                     |                  |             |             |                      |             |
| 14.000               | +/-0.010            | 14.00            | ✓           |             | TAPE                 | LG-22       |
| 3.500                | +/-0.010            | 3.503            | ✓           |             | VERN                 | CNC-08      |
| 88.93                | +/-0.030            | 89.00            | ✓           |             | TAPE                 | LG-22       |
| Ø3.200               | +/-0.010            | 3.210            | ✓           |             | VERN                 | CNC-08      |
| <del>88.93</del>     | <del>+/-0.030</del> | <del></del>      | <del></del> | <del></del> | <del></del>          | <del></del> |
| Ø3.750               | +/-0.010            | 3.740            | ✓           |             | MIC                  | CNC-05      |
| 30° x 0.060 chamfer  | +/-0.010            | 30° x .060       | ✓           |             | VERN                 | CNC-08      |

|                               |                       |
|-------------------------------|-----------------------|
| <b>Measured by:</b> KCDAS     | <b>Date:</b> 12-10-13 |
| <b>Audited by:</b> 14<br>9-83 | <b>Date:</b> 12/11/01 |

|                     |               |        |   |  |        |       |
|---------------------|---------------|--------|---|--|--------|-------|
| <b>HAAS Section</b> |               |        |   |  |        |       |
| 1.526               | +0.000/-0.030 | 1.520  | ✓ |  | Vern   | ML-06 |
| 7.500               | +/-0.010      | 7.500  | ✓ |  | "      |       |
| 27.750              | +/-0.010      | 27.750 | ✓ |  | M-tape | ML-04 |
| 31.750              | +/-0.010      | 31.750 | ✓ |  | "      |       |
| 35.250              | +/-0.010      | 35.250 | ✓ |  | "      |       |
| 3.300               | +/-0.010      | 3.291  | ✓ |  | Vern   | ML-06 |
| 0.200               | +/-0.010      | .200   | ✓ |  | "      |       |
| 3.520               | +/-0.010      | 3.516  | ✓ |  | "      |       |
| 0.687               | +0.010/-0.000 | .687   | ✓ |  | "      |       |
| R0.062              | +/-0.010      | R0.062 | ✓ |  | R-L    |       |
| Ø0.484              | +0.005/-0.001 | Ø.488  | ✓ |  | Vern   | ML-06 |

|                                       |                       |
|---------------------------------------|-----------------------|
| <b>Measured by:</b> DAS<br>14<br>9-83 | <b>Date:</b> 12/11/01 |
| <b>Audited by:</b> DAS<br>08<br>9-83  | <b>Date:</b> 12/11/01 |

| Rev | Date     | Change                                     | Revised by | Approved |
|-----|----------|--|------------|----------|
| A   | 06.04.24 | New Issue P/O D3391-015/-025               | KJ/JLM     |          |
| B   | 06.06.19 | Dwg revision update                        | KJ/JLM     |          |
| C   | 07.04.20 | Ø0.208 dimension removed                   | KJ/JLM     |          |
| D   | 07.09.06 | 0.400 dimension removed                    | KJ/JLM     |          |
| E   | 07.11.23 | Dwg Rev. updated                           | KJ/EC/DD   |          |
| F   | 09.04.27 | Dimensions updated per Rev H and NCR09-028 | KJ/JLM     |          |
| G   | 09.11.16 | Dimension 0.200 removed                    | KJ         |          |
| H   | 11.06.21 | Dimension 44.995 removed                   | KJ         |          |
| I   | 12.05.15 | Dwg Rev updated                            | KJ         |          |
| J   | 12.05.23 | Dimension updated                          | KJ         |          |



**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

| QTY | PART NUMBER  | DESCRIPTION             |
|-----|--------------|-------------------------|
| X   | D3391-041    | FLOAT SKIDTUBE ASSEMBLY |
| 1   | D3391-011    | FWD TUBE ASSEMBLY       |
| 1   | D3391-013    | MID TUBE ASSEMBLY       |
| 1   | D3391-015    | AFT TUBE ASSEMBLY       |
| 2   | D3591-1      | BUSHING                 |
| 4   | D3672-3      | WASHER                  |
| 1   | D4095-041    | WEARSHOE                |
| 1   | D4095-043    | WEARSHOE                |
| 1   | D4095-045    | WEARSHOE                |
| 1   | D4095-047    | WEARPAD                 |
| 1   | D4095-049    | WEARPAD                 |
| 1   | D4095-051    | WEARSHOE                |
| 24  | AN3C4A       | BOLT                    |
| 10  | AN3C6A       | BOLT                    |
| 4   | AN3C7A       | BOLT                    |
| 38  | AN960C10L    | WASHER                  |
| 4   | MS27039C4-12 | SCREW                   |
| 4   | AN960C416L   | WASHER                  |

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WORK ORDER

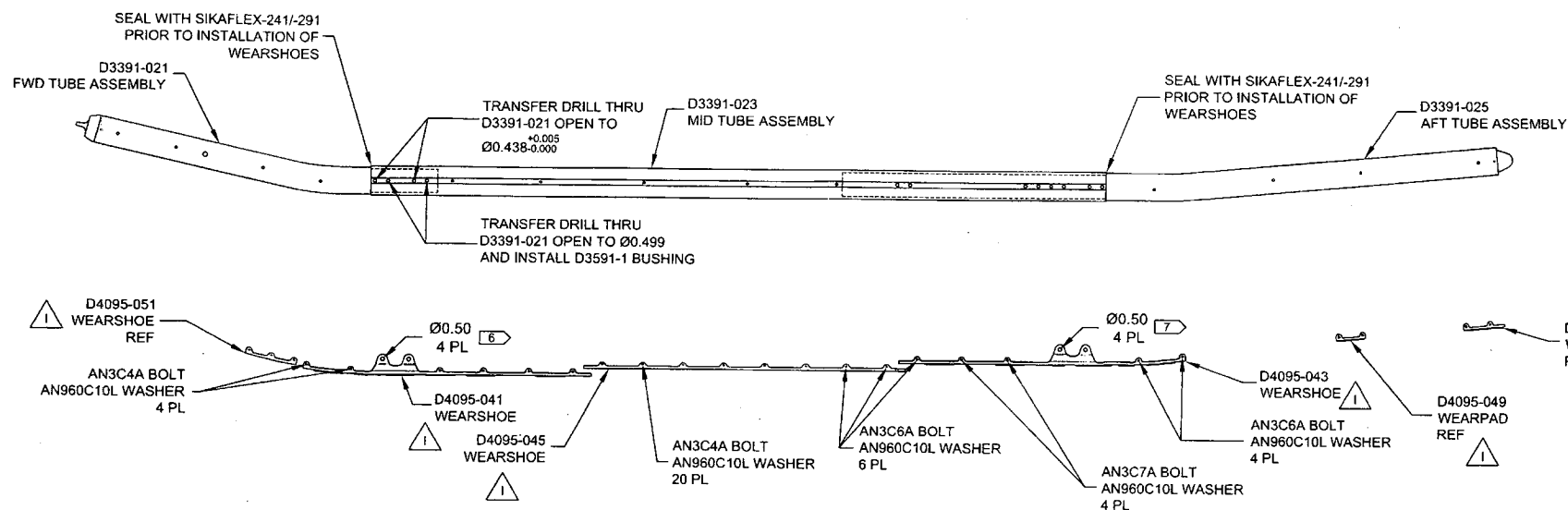
NO. 90747 MJS  
GENERAL NOTES 12-09-25

- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"  
AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.
- FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH  
APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND  
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH  
THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND  
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

RELEASED  
2011-11-04  
ECN#11-662

|            |   |  |              |
|------------|---|--|--------------|
| I          | REMOVE GASKETS AND REPLACE ALL WEARSHOES;<br>PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4,<br>ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2,<br>ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130,<br>ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4<br>ZN D2-4, ZN D7-8, ZN D3-8                      | XDF  | 11.10.13     |
| H          | DRAWING UPDATED TO CURRENT STANDARDS.<br>SHT 1 PL ADDED D3591-1 BUSHING, ZN C6 Ø0.438 DIM<br>WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING.<br>SHT 2 PL ADDED D3591-1 BUSHING, ZN C6 Ø0.438 DIM<br>WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING.<br>(FOR FURTHER INFO SEE DSI 9364 & NCR 08-074) | AJS  | 08.08.20     |
| G          | REPLACE NAS INSERTS W/ AELS INSERTS<br>SWITCH TO D3670-XXXX SPACERS FOR INSTALLING<br>FLOAT BAGS, DWG REORGANIZED FOR CLARITY   | DC   | 07.07.31     |
| F          | ADD SS WEARSHOE, GASKET<br>REMOVE FWD SADDLE HOLE -011/-021   | PH   | 07.01.18     |
| E          | CHANGE TOLERANCE, EASE MANUFACTURE  | PH   | 06.04.25     |
| D          | UPDATE TOLERANCE, CHANGE HOLE SIZE  | PH   | 06.01.23     |
| C          | LENGTHEN AFT EXTENSION  | PH   | 05.09.27     |
| B          | DRAWING UPDATES   | PH   | 05.06.10     |
| A          | NEW ISSUE   | PH   | 05.02.07     |
| REV.       | DESCRIPTION   | BY   | DATE         |
| DESIGN     | PH  | DART AEROSPACE USA, INC  |              |
| DRAWN      | XDF   | KENT, WA   |              |
| CHECKED    |   | DRAWING NO.  | REV. 1       |
| MFG. APPR. |   | D3391  | SHEET 1 OF 8 |
| APPROVED   |   | TITLE  | SCALE        |
| DE APPR.   |   | 412 FLOAT SKIDTUBE   | NTS          |
| DATE       | 11.10.13  | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC. |              |

90747

**D3391-043 ASSEMBLY****D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

| QTY | PART NUMBER | DESCRIPTION             |
|-----|-------------|-------------------------|
| X   | D3391-043   | FLOAT SKIDTUBE ASSEMBLY |
| 1   | D3391-021   | FWD TUBE ASSEMBLY       |
| 1   | D3391-023   | MID TUBE ASSEMBLY       |
| 1   | D3391-025   | AFT TUBE ASSEMBLY       |
| 2   | D3591-1     | BUSHING                 |
| 1   | D4095-041   | WEARSHOE                |
| 1   | D4095-043   | WEARSHOE                |
| 1   | D4095-045   | WEARSHOE                |
| 1   | D4095-047   | WEARPAD                 |
| 1   | D4095-049   | WEARPAD                 |
| 1   | D4095-051   | WEARSHOE                |
| 24  | AN3C4A      | BOLT                    |
| 10  | AN3C6A      | BOLT                    |
| 4   | AN3C7A      | BOLT                    |
| 36  | AN960C10L   | WASHER                  |

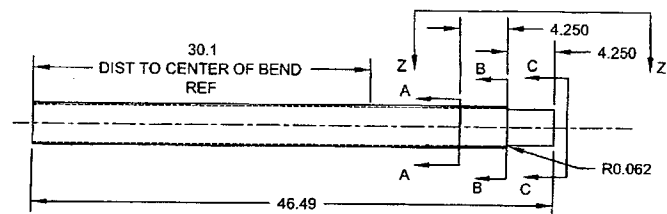
**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
- 3) AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 7) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041  
FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

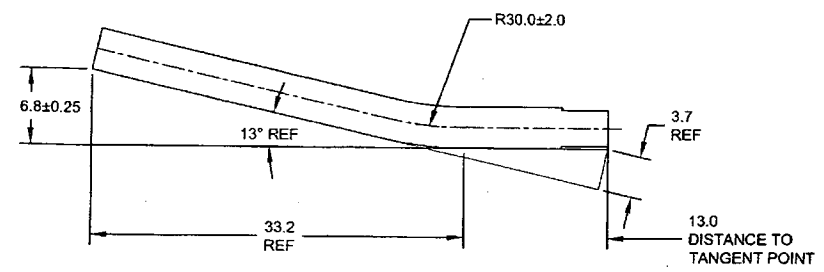
RELEASED  
2011-11-04

|            |          |  |              |
|------------|----------|--|--------------|
| DESIGN     | PH       | <b>DART AEROSPACE USA, INC</b>   |              |
| DRAWN      | XDF      | KENT, WA   |              |
| CHECKED    |          | DRAWING NO.  | REV. 1       |
| MFG. APPR. |          | D3391  | SHEET 2 OF 8 |
| APPROVED   |          | TITLE  | SCALE        |
| DE APPR.   |          | 412 FLOAT SKIDTUBE   | NTS          |
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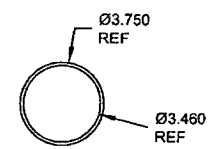
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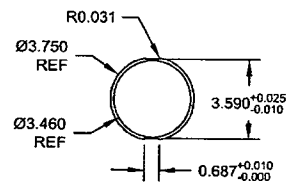
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



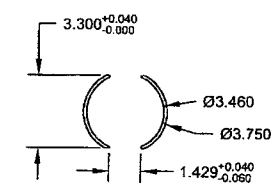
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



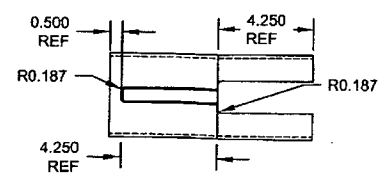
**SECTION A-A**  
SCALE 2X



**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X

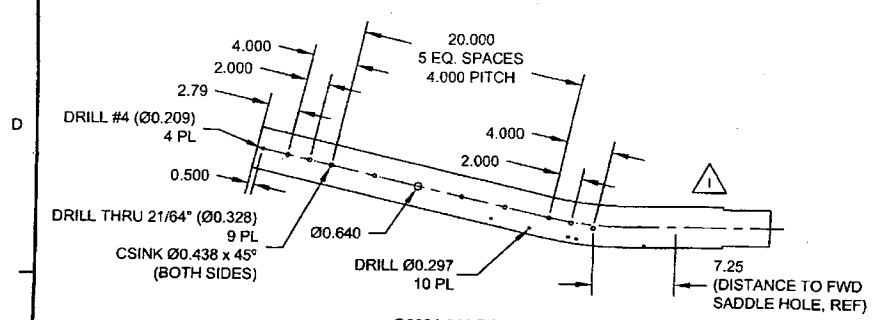


**VIEW Z-Z**  
SCALE 2X

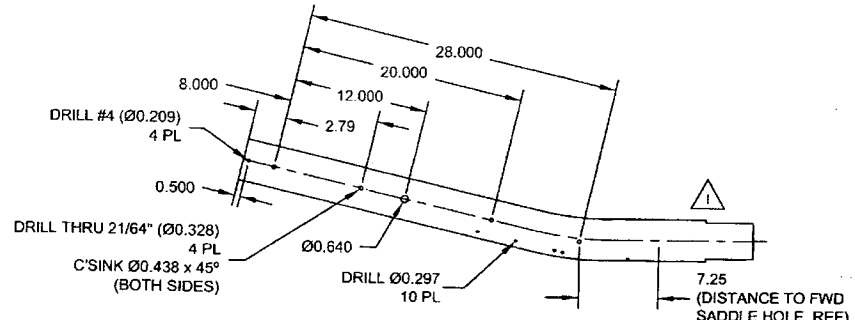
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| MFG. APPR. |          | D3391  | SHEET 3 OF 8 |
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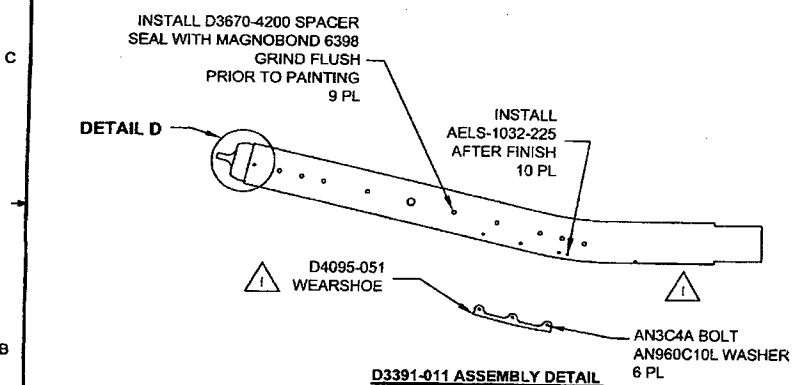
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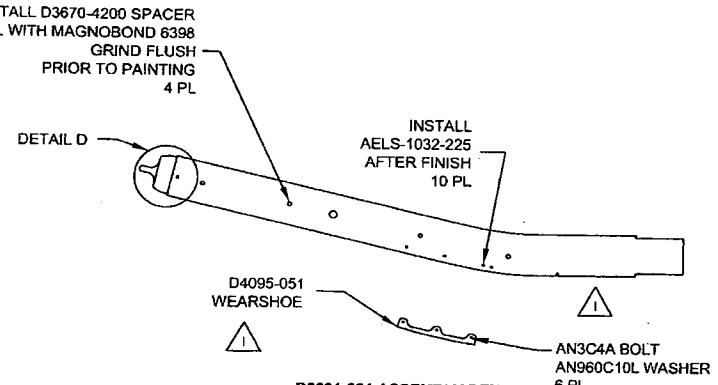
**D3391-011 DRILLING DETAIL**



**D3391-021 DRILLING DETAIL**



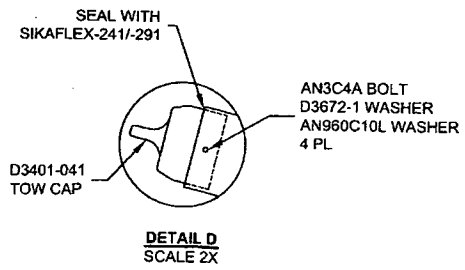
**D3391-011 ASSEMBLY DETAIL**



**D3391-021 ASSEMBLY DETAIL**

**D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST**

| QTY - 011 | QTY - 021 | PART NUMBER   | DESCRIPTION       |
|-----------|-----------|---------------|-------------------|
| X         | X         | D3391-011     | FWD TUBE ASSEMBLY |
|           |           | D3391-021     | FWD TUBE ASSEMBLY |
| 1         | 1         | D3401-041     | TOW CAP           |
| 9         | 4         | D3670-4200    | SPACER            |
| 4         | 4         | D3672-1       | WASHER            |
| 1         | 1         | D4095-051     | WEARSHOE          |
| 1         | 1         | D6013-047     | FWD TUBE          |
| 10        | 10        | AN3C4A        | BOLT              |
| 10        | 10        | AN960C10L     | WASHER            |
| 10        | 10        | AELS-1032-225 | INSERT            |

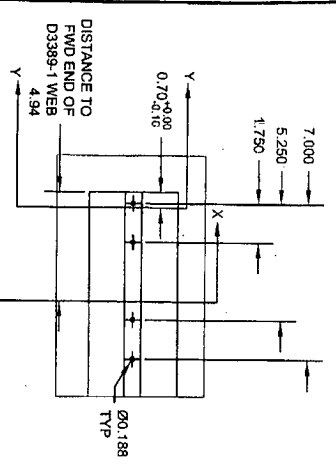


**DETAIL D  
SCALE 2X**

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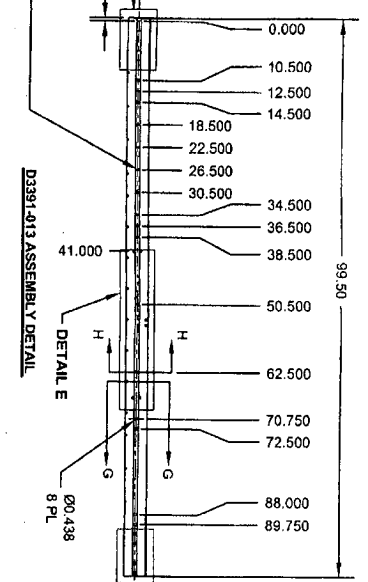
|               |     |  |              |
|---------------|-----|--|--------------|
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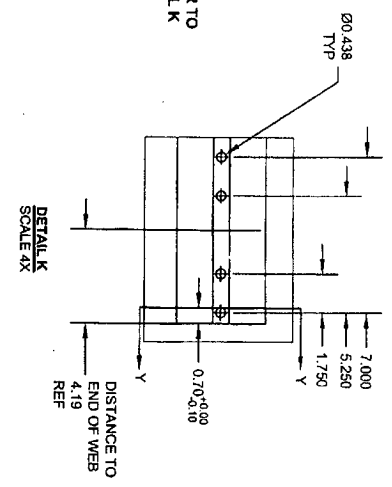


DETAIL J  
SCALE 4X

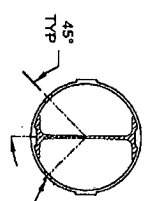
DRILL THRU 2 1/64" (Ø0.328)  
CSINK Ø0.438 X 45° (BOTH SIDES)  
12 PL



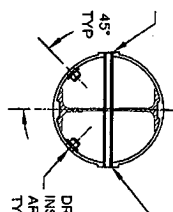
D3391-013 ASSEMBLY DETAIL  
SCALE 1X



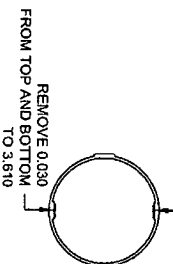
DETAIL K  
SCALE 4X



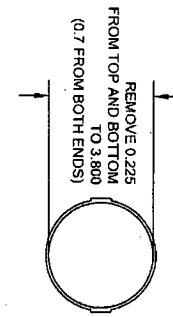
SECTION G-G  
SCALE 5X



SECTION H-H  
SCALE 5X



SECTION X-X  
SCALE 5X

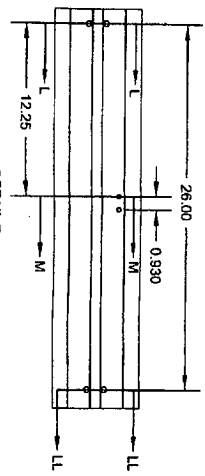


SECTION Y-Y  
SCALE 5X

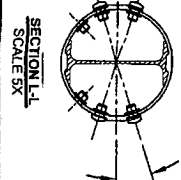
D3391-013 MID TUBE ASSEMBLY PARTS LIST

| QTY | PART NUMBER   | DESCRIPTION       |
|-----|---------------|-------------------|
| X   | D3391-013     | MID TUBE ASSEMBLY |
| 1   | D2500-1-100   | EXTRUSION         |
| 1   | D3398-1       | WEB               |
| 4   | D3672-1       | WASHER            |
| 4   | D3672-3       | WASHER            |
| 12  | D3681-1       | SPACER            |
| 24  | AEIS-1032-130 | INSERT            |
| 4   | ALS4-428-165  | INSERT            |
| 4   | AN960C10L     | WASHER            |
| 4   | AN960C416L    | WASHER            |
| 4   | MS27039C1-09  | SCREW             |
| 4   | MS27039C4-08  | SCREW             |

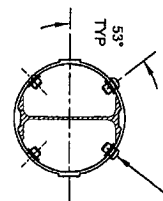
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3398-1 WEB TO OUTER TUBE USING SIKAFLEX 241/291 PER CSI 015
- 3) WELDING: PER DART CS1 004



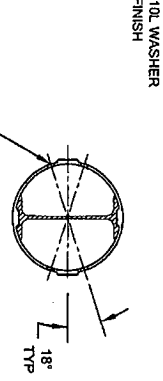
DETAIL E  
SCALE NONE



SECTION L-L  
SCALE 5X



SECTION M-M  
SCALE 5X



SECTION L-L  
SCALE 5X

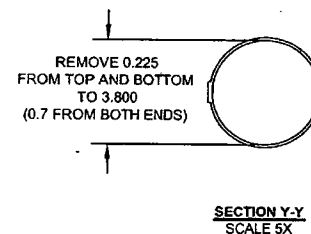
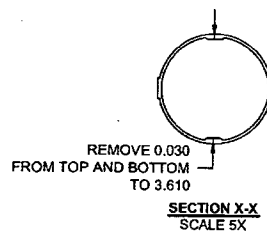
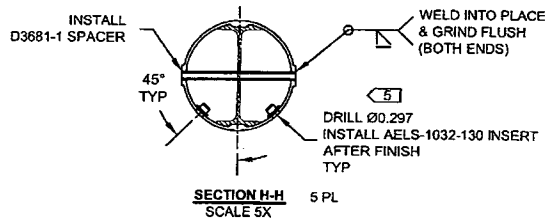
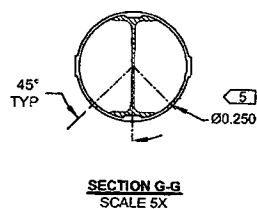
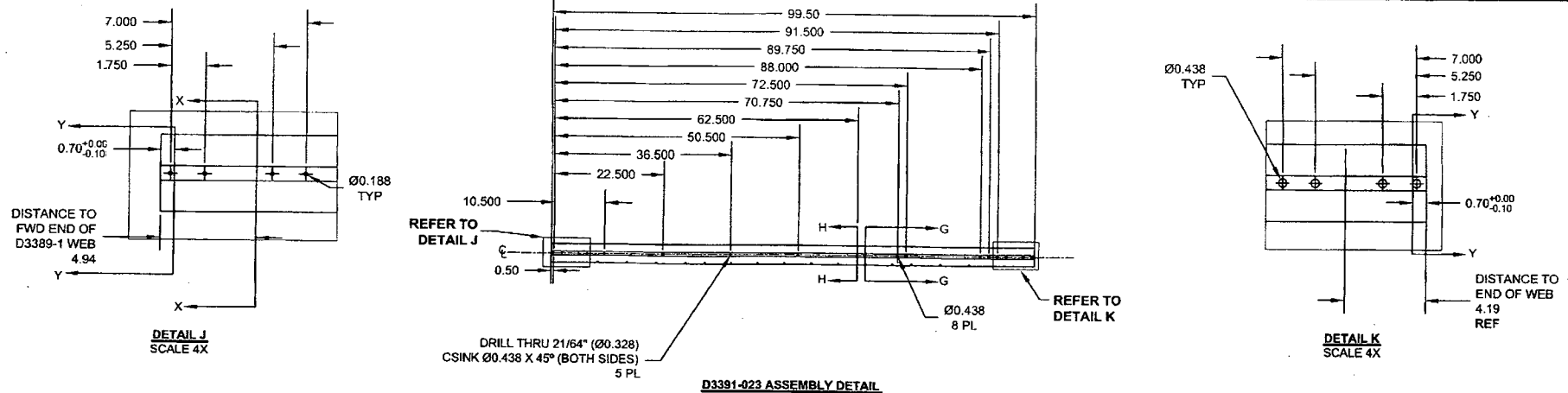
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REV. 1  
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**D3391-023 MID TUBE ASSEMBLY PARTS LIST**

| QTY - 023 | PART NUMBER   | DESCRIPTION       |
|-----------|---------------|-------------------|
| X         | D3391-023     | MID TUBE ASSEMBLY |
| 1         | D2500-1-100   | EXTRUSION         |
| 1         | D3389-1       | WEB               |
| 5         | D3681-1       | SPACER            |
| 20        | AELS-1032-130 | INSERT            |

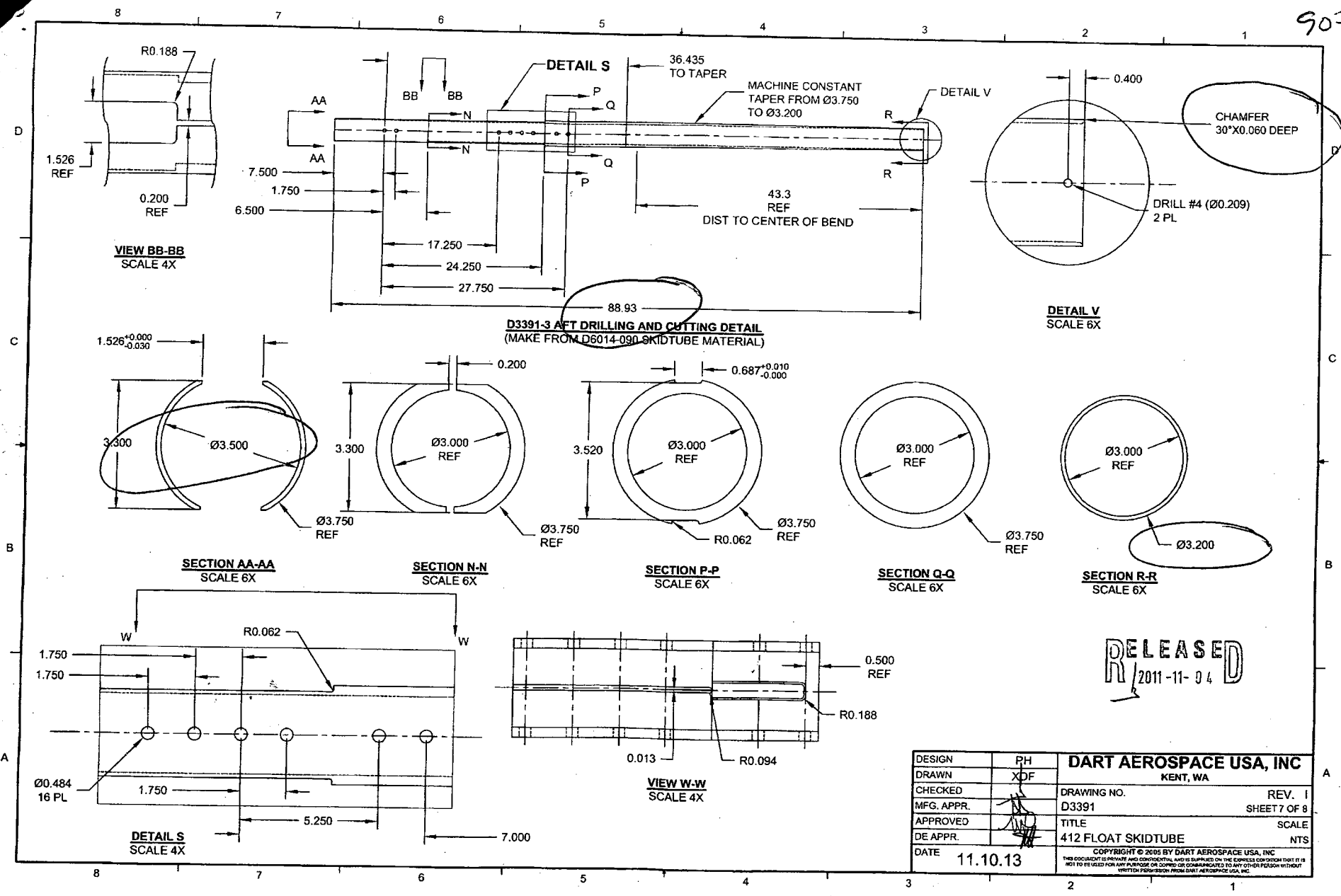
**D3391-023 MID TUBE ASSEMBLY**

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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| MFG. APPR. |          | D3391  | SHEET 7 OF 8 |
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